321 412 tool, and the drill. In our time nearly all these tools had steel or iron blades, and a fifth had been added, a small saw with a blade of hoop iron. Saws were not numerous, however, and it was still a common sight to see a native scoring deep cuts in bone or antler with his grooving tool and then breaking out sections with his adze. The curved whittling knife gave the final shape, and rubbing, first with stone or sand and then with a strip of hide, the smoothness and polish. Musk-ox horn alone was susceptible of a different treatment; to make from it ladles and scoops, the natives split it longitudinally, steamed it over their cooking pots, then opened it out and bent it to shape by simple pressure and hammering.

237 There was current among the Copper Eskimo one other substance similar to the foregoing, baleen, but it was rather scarce, and in the eastern part of the territory almost unknown. Whether it came from stranded whales, or was brought in from the west, I did not discover. The natives used it, apparently, 237 224 for fishing lines only, lines mainly for catching tomcod during the winter months 283 when the more usual lines of sinew tended to become brittle with encrusted ice. I never saw them cut or split baleen, but doubtless they used the whittling knife for this purpose.

HIDES AND SINEW

237 [433] It is hard for the civilized inhabitant of a warmer country to realise the immense importance of skins in the domestic economy of the Copper Eskimo. They provide him with clothes and bedding throughout both winter and summer, bags in which to store his clothing, a tent for use nearly half the year when a snow-hut was either uncomfortable or impossible, a cover for his kayak, straps and lashings for his sled, harnesses and traces for the dogs, lines and lashings for harpoons and other weapons, packing lines, dog packs, water buckets, pokes for meat and blubber, and other articles for which Europeans utilize cloth, rope, or metal. It was, consequently, of the utmost importance to the native that he should know how to treat skins to the best advantage. Fortunately, the two animals on which he depended most for his food, the seal and the caribou, were precisely the ones whose hides were the most useful.

281 [225] *Seal Skins.* The Copper Eskimo had two methods of skinning a seal. They generally made a cut around the base of each flipper, another around the neck, and a third down the belly, after which they separated the skin from the blubber with a knife. As it was impossible to remove all the blubber in this way, the skin was then soaked in warm water. Holding one end in her mouth while the [462] other remained in the pot, the woman (for the work almost invariably fell on [412] the housewife) scraped it thoroughly with her curved knife. As soon as the weather was warm enough she set it out to dry, sometimes on top of the house, sometimes on the ground, sometimes pegged over and around a block of snow.

A sealskin thus dried was roughly oval in shape and still retained the hair [415] on the outside. If you folded in the ends, doubled it over and tied a line to each end, you had the common Copper Eskimo fishing bag; if you laced each [492] end across through the holes by which it was pegged out, you had a dog pack, broad and flat in the middle where it rested on the animal's back, and bag-shaped at each end for holding the meat or clothing. The hair was no 281 disadvantage in such skins; indeed, for raincoats and for spring foot gear it 294 was indispensable, but as the skin was more supple without it, it was generally removed by resoaking in warm water and scraping with a knife. To soften the skin still more, and to change the outer surface from a dark colour to white, it was subjected to further scraping, and, after drying, rubbed between the hands and chewed between the teeth, when odd scraps that came away found lodging in the chewer's stomach. From these creamy white skins were made the sealskin

shoes worn by both sexes during the greater part of the year. Steeped in urine for several hours they became waterproof, and served for summer boots, water buckets, quivers, and other articles.

For lines and lashings (which the men made, not the women) it was not necessary to tan the skin; after the removal of the hair the man merely soaked it for a third time in warm water, and cut it in a continuous spiral with his curved whittling knife, while his wife or a friend held the severed parts taut and slightly apart. In cutting he simply pressed the knife, guiding it with his thumb from below, but wherever the strip was very narrow he generally sawed the blade up and down, holding the severed parts in his left hand and guiding the blade with the left index. Newly cut lines were stretched taut between two or more poles out of doors to dry.

The second method of skinning a seal was used only when the owner required a bag with a small opening for storing blubber. The woman then cut the skin around the base of the neck and from the bottom of one hind flipper across to the other. To separate the flesh from the skin—and as far as possible also the blubber—she circled the long snow-knife round between them from each end; then by drawing back the flippers and severing them at the joints with her curved knife, she could draw off the skin over the tail. Subsequently she cut away most of the adhering blubber and sewed up the bottom, leaving the neck open to be tied with a sealskin cord when the poke was filled. In most cases she sewed a strap handle to each end to facilitate handling, as these pokes when filled with blubber weighed from 150 to 200 pounds; if the poke was small, however, she substituted for the straps a short stick thrust through the neck. The Copper Eskimo never skinned an animal through the mouth after the manner of the western Eskimo, or closed their pokes with stoppers.

Although bearded seals were numerous in Dolphin and Union strait, the Eskimo secured very few; and they used for harpoon and sled lines most of the skins of those they did kill, though they were fully aware of the superiority of bearded over foetid sealskins for foot gear. Even their kayaks they covered with the skin of the much commoner foetid seal. Naturally, they treated both kinds of skin in the same way.

Caribou Skins. More important even than sealskins to the Copper Eskimo were the caribou skins from which he made his bedding and the greater part of his clothes, as well as dog harnesses, spring and summer tents, and many other articles that were absolutely indispensable. He skinned the caribou in a way slightly different from that of the ordinary white hunter or from that of the Indians to the south. Beginning at the throat, he cut right down the belly to the tail, then from the hock of each leg up the back as far as the knee, continuing up the inside of the thigh until he reached the incision along the belly. He next punched away the skin from the body down one side, drew out the tail and pulled the skin off down to the feet, where he cut it away at the level of the front of the hoof. Then he slit it down the side of the cheek through the eye and round the base of the horn, and punched it loose with the handle of the hunting knife. Rolling the animal over, he pulled out the skin from below, punched it free of the whole body, and stripped it off down the remaining two legs. A final cut down this cheek similar to the one on the other side, and a few more punches, completed the operation. Thus the skin of the head was removed in three sections that joined at the neck; but the middle strip ran from between the horns to the top of the nose only, as the Eskimo never troubled to remove the skin around the nostrils. Whenever the horns were in the velvet the hunter could jerk the skin over them; but with old bulls whose horns had many branches and roots almost meeting on the forehead, he was often satisfied to strip only the cheeks and leave the skin on the middle of the face untouched. Occasionally he slit from the nose down to midway between the horns, leaving

bone, and seldom exceeded 4 inches in length. The teeth, which generally numbered from five to seven, were cut with the man's grooving tool, and a hole was nearly always drilled in the upper end for attaching the article to the needle-case. Most combs were simply cut off in a blunt point at the top, and though at times this shape was slightly modified, there was never any attempt at ornamental carving. Even the surface was rarely etched, and then only with two or three straight lines or with the ring-and-dot pattern. Typical specimens are shown in Figure 42.

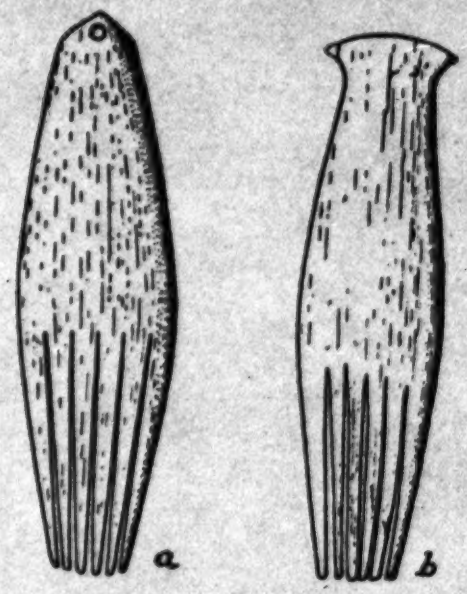

Figure 42. Women's combs. IV.D.1093, 988. 1/1.

Snow goggles (Figure 43), made of wood or antler, had the shape usual among all Eskimos. Projecting brow-pieces to intercept light from above were not uncommon. The cord was of sinew or sealskin. The slits were of even width, rarely widened at the inner end as in many goggles from Hudson Bay. Ornamentation was absent.[1]

Tattooing. The appearance of the women was greatly affected by tattooing. Only two men were seen with tattoo marks, which in both cases consisted of two short lines across the bridge of the nose. The marks on one man, a native from Coppermine River, had no significance that I could discover. He stated himself that they were due to an arbitrary whim, but I strongly suspect that

[1] See Plate VI in Report of the Canadian Arctic Expedition, vol. XII, pt. B, p. 32B.

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its lower end. The upper end was usually knobbed or curved to afford a better grip. The edge of this type of stretcher was sometimes almost semicircular (Figure 90c).

There was a slight difference in the manner of holding these two types. In the stretcher made from a shoulder bone the thumb rested on the upper surface of the blade and the pressure on the hand was divided almost equally between the palm and the cleft between thumb and forefinger. In the stretcher of leg bone, on the other hand, it was the forefinger that usually rested on the blade and the friction came almost entirely on the palm.

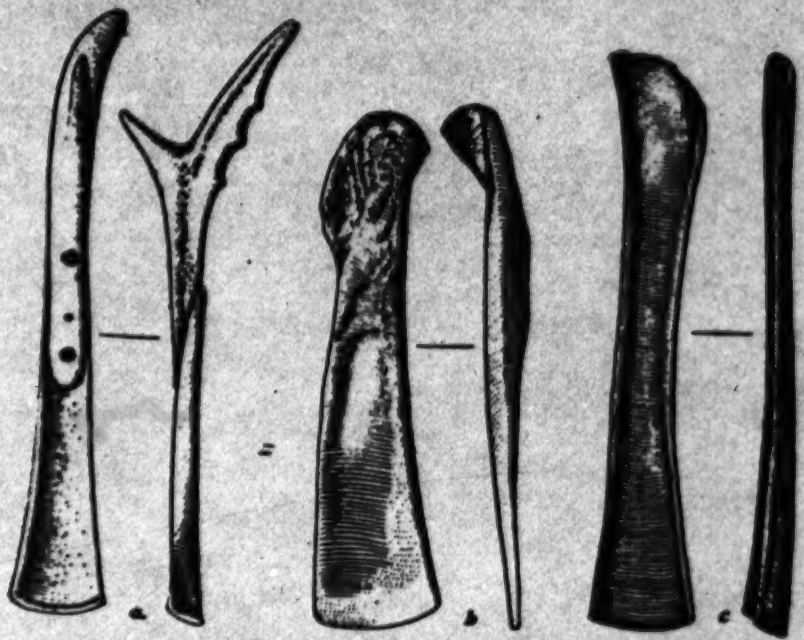

Figure 90. Skin stretchers, made from leg bones. IV.D.1622. 204, 828. Approx. 1/2.

Figure 90a shows a very unusual specimen. The blade is made from the leg bone of the musk-ox, but in order to lengthen it and give a better grip it has been attached by copper rivets to a handle of antler such as is used for the skin scraper. Another unusual feature about this specimen is that the handle is grooved to fit the fingers, like the blubber pounder and the marline-spike for the bow. It was purchased in Coronation Gulf.

The specimen shown in Figure 90b has a number of holes drilled into the handle, both at the end and on one side, which are not visible, unfortunately, in the drawing. Two of them still retain traces of hide or sinew, indicating that the end was once covered with hide to protect the hand. Usually the worker simply wore a mitten, which had the same effect.

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Sinew. All the sinew that I saw used for actual sewing came from the back of the caribou; the much coarser leg sinew was employed only for fishing

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lines, harpoon lines, and lashings of various kinds. No doubt the Copper Eskimo in emergencies made use of sinew from other sources, for the Mackenzie Delta natives sometimes use the sinew on the tail of the fox, which is about a foot long and said to be of excellent quality. 283

After the flesh had been carefully scraped away the sinew was allowed to dry a little; but as prolonged exposure to the heat of the sun rendered it stiff and brittle, it was generally stored away at once in a bag. The value of a slab of back sinew was fairly high everywhere along the Arctic coast.[1] Caribou were very abundant in the Copper Eskimo country until about 1919, but in the absence of linen or cotton thread—which in any case is less suitable for skin garments—sinew was in such great demand that it was constantly traded from one family or group to another. [435] [136] [437]

For ordinary sewing a thin strand was stripped off the slab with the teeth or thumb nail, drawn through the teeth to remove all roughness, and rolled against the cheek to twist it into a single smooth thread. Waterboots, however, called for a stouter three-ply thread, made by the women and girls in the house, where they fastened the ends of the threads to the drying rack, and caught the middle strand between the second and third fingers while they crossed the two outer ones with the thumbs and index fingers. Fishing lines of leg sinew were plaited similarly of three strands, but the harpoon lines, which required to be flat, had from four to eight strands, sometimes even more. Twisting, as with rope, was an unknown art.

Sewing Bags and Baskets. A Copper Eskimo woman without her needle and thread would have been as uncomfortable as a European housewife without her knitting. Sewing was no impediment to gossip: the woman sat on the sleeping skins, her legs doubled under her or stretched out in front, and plied her needle and her tongue at the same rate. Always she sewed from right to left; only a left-handed person sewed in the opposite direction. She held the thimble on the first finger (not on the middle, as we do), and pushed the needle through the skin with the side of the thimble, not with its top, if indeed it had a top. Then she caught the point between the thumb and middle finger, drew the needle out, turned it on its side, and with her thimble behind it pulled through the thread and reinserted the needle for the next stitch. Usually she did not tauten the thread until the second stitch. 294 [162] [516] [521]

There was more sewing to be done at certain seasons than at others. Thus, in the autumn, all the new clothing for the winter had to be finished before the sun disappeared below the horizon for the long winter night. The women then sewed from early morning until late at night, with only brief respites to cook the meals or to pass the time of day with neighbours. A woman who had no children to sew for was, of course, less busy; the mother of a family was obliged not only to make the clothes for the whole household, but to train her girls to be dressemakers also. The latter began their training with odd scraps of skin, which they learned to join with neat close stitches. Later, they mended rents in their own clothing, and made dolls fully clothed from head to foot. Many men could make their own trousers and socks, and even sealskin shoes in an emergency; but only a very few could cut out a well-fitting coat or make a pair of waterboots that would really keep out the water. Even the women never attained great skill in these last-mentioned tasks until long after marriage, and a young wife often sought the assistance of an older relative or friend. [221] 294 422 828

The work-basket of most women was a bag of caribou or some other skin, or else, more rarely, a neatly worked basket of coiled willow twigs held in place with willow-bark stitching (*Figures 91, 92*). All the baskets that I saw were 415 [289]

[1] In 1916 the price of one slab of reindeer back sinew at Barrow, Alaska, was $1.

[TEXT CONTINUED ON PAGE 90]

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especially the lower arm of the front notch, which carried the weight of the line; consequently, this notch was often built up by splicing a short projecting piece of wood to the under side of the rod. Sometimes a bone pin was inserted about the middle of the rod, on its upper surface, for shortening the line a little; for in shallow lakes the line was lowered until it touched the bottom, then raised a few inches with a turn around this pin, and fastened with a half hitch to the lower arm of the front notch.

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The second type of fishing rod was simply a straight stick also notched at each end. Usually it was a little longer than the curved variety and was especially favoured for cod fishing, though no great distinction was made between the two kinds.

Both types of rod, with all their attachments, are shown in Figures 125 and 126.

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Capt J. Bernard discovered an ancient rod of antler (Figure 127) in an old stone house on Bell Island, off the southwest coast of Victoria Island. It closely resembles Copper Eskimo specimens, though the house itself must date from the earlier Thule culture. I do not know the purpose of the holes drilled in each end.

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The common line for these rods was a stout 3-ply cord, plaited from caribou leg sinew. It varied greatly in length, but generally ran from 35 to 60 feet. The upper end was fastened in different ways, sometimes with a few half hitches around the front of the rod, sometimes by a knot at the back end; the lower end was attached to the sinker, not to the hook, because the sinker and hook were riveted together.

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[237]

For tomcod fishing in winter the western Copper Eskimo preferred a line of baleen to a sinew line, because the latter became encrusted with ice and was easily broken. These baleen lines, which could be quite short, were naturally commonest around Dolphin and Union Strait; natives farther east, who seldom or never saw a stranded whale, obtained them only by trade.

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The sinkers were of bone, antler, or musk-ox horn, most often the first two. There were two types, one for use with a comparatively small hook when fishing in the lakes for trout and salmon, the other for use with a very much longer hook for esteb-ing cod.

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The former type of sinker was usually from 1 to 2 inches long, oval in outline, flat on one face and rounded on the other. Most of them had two holes drilled through the upper end, one below the other. The end of the line then passed twice through both holes, forming a double-stranded noose, and was plaited back an inch or two from the sinker, where it was bound occasionally

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Figure 122. Snow sounder. IV.D.1084. 1/4.

Figure 124. Snow sounder with unusual handle of musk-ox horn. IV.D.110. 1/4.

one needle, 8 inches long, the splinter was mounted in a wooden handle. The line was of sealskin, generally closed at the far end with a stick of bone, antler, or wood to prevent the fish from slipping off.

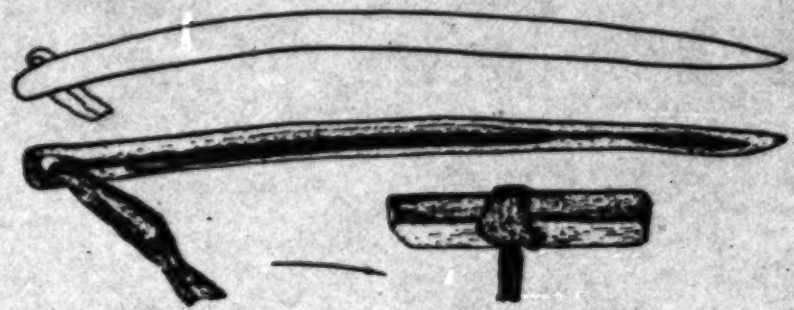

Figure 122. Bone needle for stringing fish. IV.D.461. Approx. 2/3.

Fish Bags. To pack their fish to camp the Eskimo used a bag of sealskin, commonly made by folding in the ends of a whole skin, doubling it over and tying a line to each end. The same bag, laced across, served as a dog-pack.

Fish Spears. Two varieties of fish spear were employed, the trident and the leister. The leister was preferred for spearing trout and salmon in lakes when they came to nibble at the lure, the trident for the migrating salmon that entered the weirs across streams; but generally a man used whichever weapon happened to be nearest at hand.

The shape of the leister is best seen from the illustration (Figure 134*a*). The handle was simply a long pole, split at the end to receive a barbed, occasionally barbless, point of antler, which was held in place with a lashing of sealskin, or more rarely of sinew. Two prongs facing each other, which sprang open on striking the fish, were invariably of copper or iron, copper, of course, being the original material; they were driven like nails into antler heads, which were bevelled off at the lower ends to fit corresponding ends on wooden extensions. Antler and wood were spliced with sealskin lashing, strengthened at times by bone or antler nails. The wooden extensions were then bevelled off in the same manner and lashed to the shaft, but not nailed, as low ridges at their tips prevented the lashings from slipping off. All these lashings quickly dried up from disuse, and the parts fell asunder except where they were held together by pegs. In a few leisters the side pieces were entirely of antler, not of antler and wood combined.

The trident (Figure 134*b*) resembled the leister, but had no prongs on the side pieces, which were made entirely of antler, pointed and barbed like the point in the middle. The number of barbs varied; in some cases they were directly opposite, in others staggered, both arrangements occurring at times on the same weapon.

Double-pointed spears were sometimes improvised for stabbing sculpins, or the small fish that hide under the stones on the margins of lakes. I have seen two sharpened pieces of bone, and even a European fork, lashed to the end of a walking-stick for this purpose. Naturally, they were dismantled again as soon as the need for them passed.

surely have been unearthed in some old ruin of pre-Copper Eskimo times, for it is identical with specimens that have been dug up in old dwellings in both Mackenzie Delta and northern Alaska. I rather suspect, however, that it came from one of these western areas, as did several other specimens in the collection that were certainly wrongly labelled.

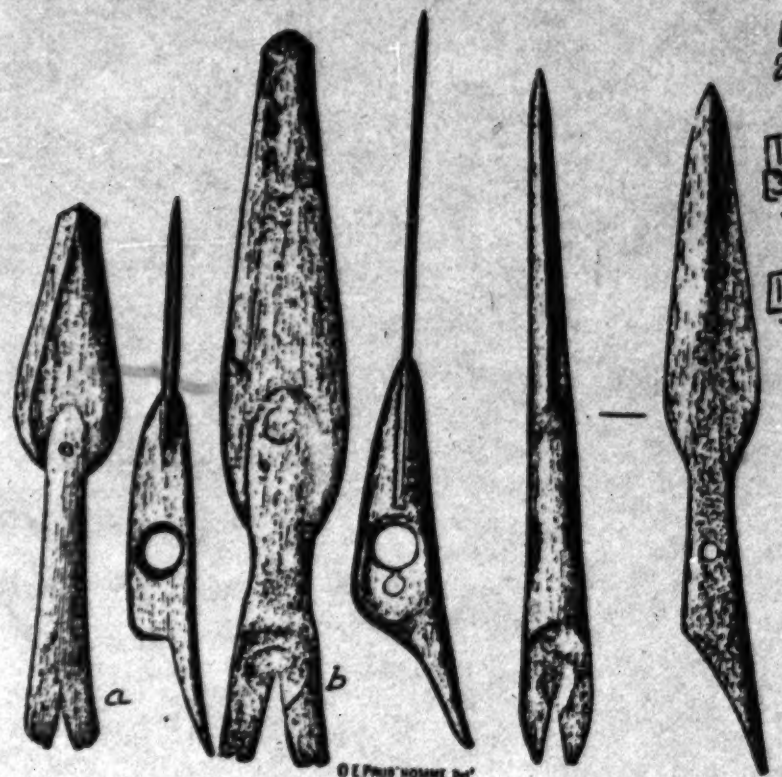

Figure 141. Modern harpoon heads with iron blades. *a*, IV.D.313. 1/1; *b*, IV.D.1054, 3/2.

Figure 142. Bone harpoon head. IV.D.1234. 1/1.

The line attached to the head of the harpoon averaged in length a little over 2 metres and was made of plaited sinew, of sealskin, or of both combined, some hunters preferring sinew for the grip, but, for the toggle end, a sealskin thong less liable to fray. All lines were double from the toggle nearly to the grip; and to one or both strands, about 3 feet from the toggle end, was tied a short piece of sinew, which tucked under the thong running along the side of the shaft and held the lower part of the line taut until the seal was struck, when it immediately slipped out of place.

When the line was of plaited sinew it was graded from an 8- or 16-ply weave down to a 4 or 6 ply. At times this was accomplished by twisting some of the strands together, a 12-ply line, for example, being combined in twos to make one of 6 ply, and this perhaps again to 4 ply; the two ends could be

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spliced, or fastened to a sealskin thong. More often, perhaps, there was a simple tapering of the line, the narrow end, after passing through the toggle, being

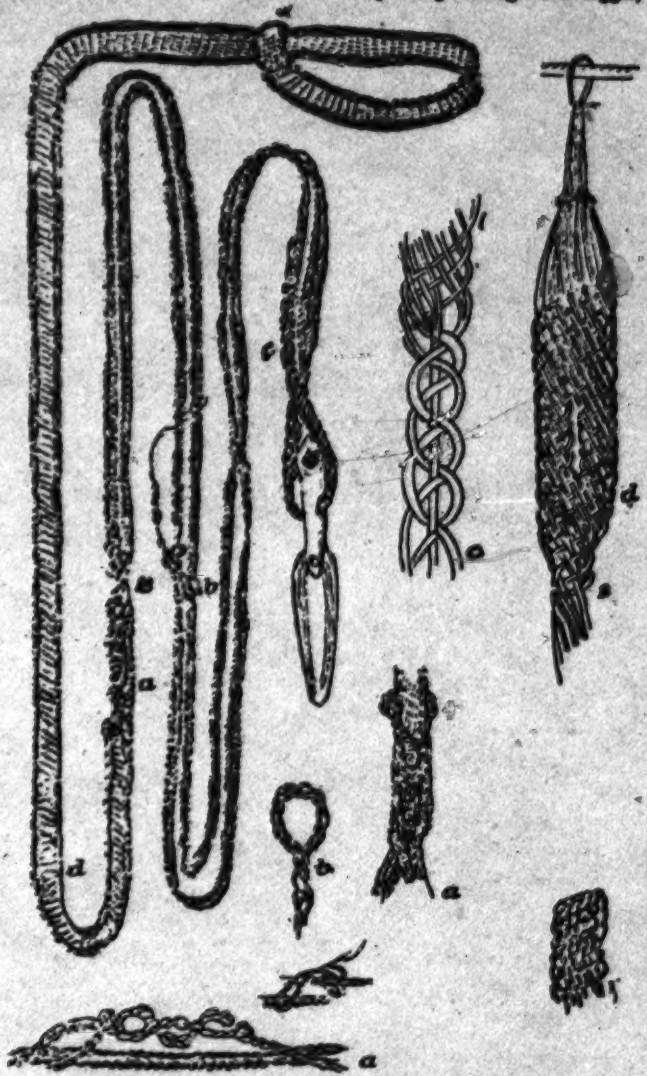

Figure 143. Details of a harpoon line made from plaited sinew. IV.D.309. 1/3.

joined back in various ways, occasionally by a simple knot. At the thick end, which the hunter held in his hand, was a running noose. The accompanying illustrations explain more clearly the details of construction (Figure 143).

225
415
412 All sealers carried these bone skewers stuck in a strip of skin, but not all of them burdened themselves with a bag and a spare harpoon. Lacking the bag, they merely cut a hole in the strip of skin for slipping it over the coat button.

225 *Toggle for Leading Dog.* Figure 149 illustrates the usual toggle for leading
231 a dog to the sealing ground. In principle it is the same as the toggle on the
412 harness. The rigid parts are of bone, antler, or musk-ox horn; the cord and strap, of sealskin or caribou leg sinew. The broad loop hung over the sealer's wrist, and the small toggle buttoned into the loop at the end of the dog trace. There was no variation except in size, and no ornamentation.

225 *Toggles for Hauling Seals.* Toggles for hauling seals were indistinguishable
412 from women's belt toggles (*See* page 50). Like most of the latter they were made of bone, antler, or musk-ox horn, nearly always the first, measured between
[321] 2½ and 4 inches from tip to tip, and had the shape of a crescent that tapered towards each end. Two ends of a short cord of sealskin, or more usually of
[283] plaited sinew, were passed through the hole and knotted to form a loop (Figure
[492] 150). The sealer threaded the toggle through a hole in the seal's mouth, passed it back through the loop and attached it to the trace of his dog, which then dragged the carcass home.

[531] Sealing toggles, like other bone implements, were often ornamented with incised lines. There will be discussed in another place.

Figure 150. Toggle for hauling seals. IV.D.167. 1/2.

LAND HUNTING EQUIPMENT

Bows and Arrows

411 Most bows were made from three pieces of spruce wood, a middle piece and
321 two "horns," joined together with the usual "cleft" or V splice (Figure 151*b*).
322 Bows made from a single piece of wood were comparatively rare (Figure 151*a*),
284 though one, owned by a 6-foot Tree River native, was stronger than any of the three-piece weapons. From the eastern end of Coronation Gulf came a few bows built up from musk-ox horn, caribou antler, or both materials combined (Figure 152), indicating a dearth of suitable wood in that region. In one of them, two pieces of musk-ox horn have been joined wth a cleft splice, but elsewhere in this bow, and in all other bows of horn or antler, the makers have used the less difficult scarfed splice, and strengthened it in places with copper or iron rivets. A few wooden bows have scarfed joints also, but they are mostly small weapons for women and children.

411 Because dry spruce has little tensility and easily fractures, every bow was
284 strengthened with a score or more strands of braided sinew[1] that extended along
232 the whole back and passed around the necks (Figure 151). Some hunters
[283]

[1] One bow, a small one for a woman or child, has thongs of rawhide, presumably from want of sinew.

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[461]

secured to the wood by a complicated series of half hitches, well illustrated by Murdoch.[1] As these back lashings slackened with frequent tension and changing weather conditions, the owner wedged little plaques of wood, skin, or bone

[321]

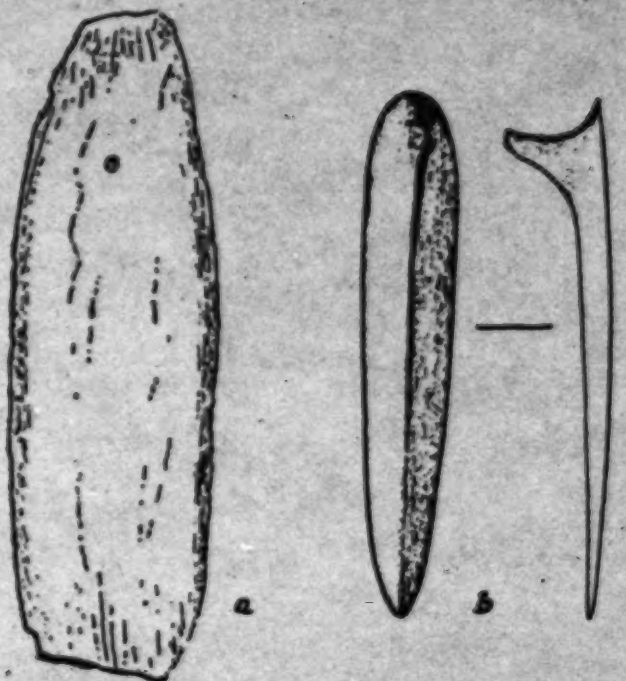

Figure 153. Braces to strengthen the joints of a bow. a: musk-ox horn; b: bone. IV.D.700, 682. 1/1.

beneath them (Figure 154), and when plaques no longer sufficed, he removed the lashings altogether and rewound them, an operation that he could perform in about an hour. Defects in the horns were more serious, but not insuperable. I have seen a native strip a bow down to the bare wood, fit it with two new horns, and relash the weapon ready for use in the space of 4 hours.

[461]

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[284]
[237]

Figure 154. Plaque of rawhide, wedged under the back lashings of the bow. IV.D.70. 1/1.

The bowstring was made from five or six strands of sinew, twisted together. When stringing his weapon, the hunter sat on the ground and pushed the middle of the bow from him with his foot while pulling the horn towards him.

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[175]

When the party of Indians with whom Hearne travelled in 1771 massacred some Copper Eskimo at Bloody Fall, near the mouth of Coppermine River, Hearne noticed that most of the Eskimo arrow heads bore triangular points of a slate-like stone, whereas the remainder had points of copper.[2] The Copper Eskimo we encountered were using only points of antler, bone, copper, or iron.

[113]

[1] Murdoch, John: A Study of Eskimo Bows in the U.S. National Museum. Report of the U.S. Nat. Mus., [illegible], fig. [illegible].

[2] Hearne: op. cit., p. [illegible].